
Description

The BIPC is a single unit in a metal housing with an external power supply. The overall dimensions of the unit are approximately 14 x 2.5 x 7 in. (356 x 64 x 178 mm).

The front panel of the BIPC has the following characteristics:

- two LEDs, labeled PORT A and PORT B, to indicate when data is received into the applicable interface port of the BIPC
- one LED to indicate when power is applied to the BIPC
- a RESET push-button switch for initializing the BIPC operation

Two 25-pin female connectors are mounted on the back panel and labeled A and B. These are the RS-232-C interface connectors for the Meridian 1 and PMS connections.

The top cover of the unit is secured with four screws. You can remove the top cover to access the option switches and jumpers, and other components mounted within the unit. [Figure 2](#) shows the layout of the components.

Power for the BIPC is connected from an external power supply. The 5-wire cable from the power supply is connected to the power connector at the back right corner of the BIPC. It provides + 5, + 12, -12 V dc, ground, and chassis ground connections.

The power supply dimensions are 4.75 x 2.75 x 2.25 in. (121 x 70 x 57 mm). See [Figure 3](#). The unit is equipped with the following two power cables:

- a 3-wire, input power cord, approximately 6 ft (1.8 m) long, with a standard, UL/CSA approved plug for connection to a standard 3-pin, 110 V, 60 Hz, AC power outlet
- a 5-wire output power cable, approximately 7 ft (2.1 m) long, with strain relief and a connector for connection between the power supply and the BIPC

Note: RS-232-C cables, to interface to and from the BIPC, are not included and must be supplied locally.

The BIPC provides the interface between a Meridian 1 and a PMS. It can operate at different data rates, use different data handling characteristics, or have similarly incompatible serial data interface (SDI) circuits. The BIPC is factory set for 9600 baud.

The RS-232-C interfaces between the circuits and the buffering needed for the interchange of serial data between the two data terminals. The functions and protocols automate the transfer of messages across the BIPC interfaces and the data links between the data terminals.

All BIPC functions are controlled by a Z80 microprocessor. Operating system storage is provided by an EPROM device ([Figure 2](#)). BIPC initialization occurs when power is applied to the unit, or when the RESET switch on the front panel is pressed.

The two 25-pin female connectors (DB25S), labeled A and B, are compatible with ISO Standard 2110-1980 for pin configuration and numbering. They provide the physical (electrical/mechanical) interface ports for the data links to the Meridian 1 and PMS. The connectors, and the RS-232-C circuits provided on them, are illustrated in [Figure 4](#). The two ports can be operated at independent data rates up to 9600 baud. However, 9600 baud on the Meridian 1 port and 1200 baud on the PMS port are used in this application. The word format (code structure and buffer control) of the PMS port is selectable, but the port is hardwired for 8-bit data, one stop bit and no parity. Data buffering to facilitate transfer of data between the independently operated ports is provided by 2 K of RAM ([Figure 2](#)).

Figure 2
BIPC component layout diagram

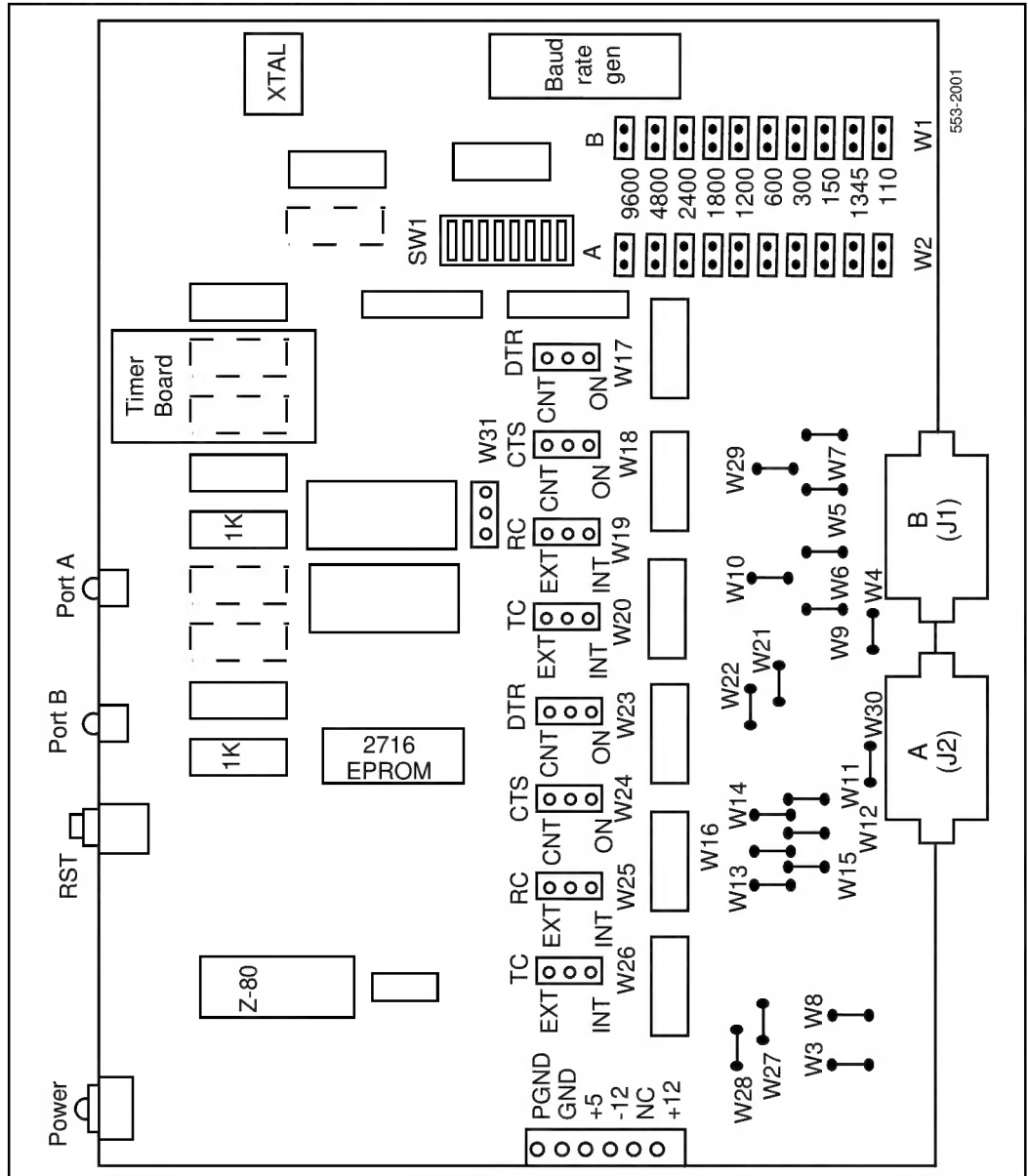
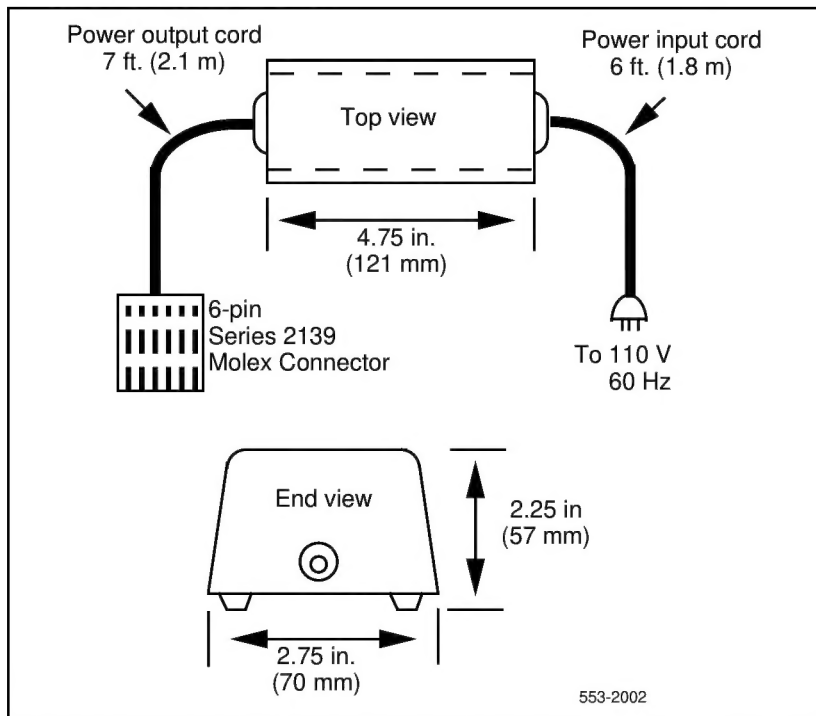
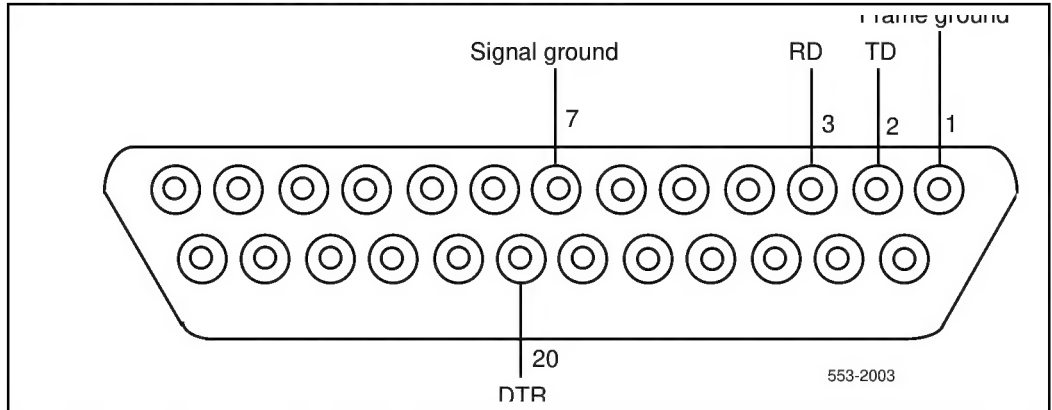


Figure 3
Power supply (A0297998)



Both BIPC ports are wired to represent data terminal equipment (DTE). For normal connections to the data communications equipment (DCE) at the Meridian 1 and the PMS, RS-232-C cables fitted with 25-pin connectors are required. The cables must include straight-through connections between pins 1, 2, 3, 7, and 20 on the two connectors to provide RS-232-C interchange circuits AA, AB, BA, BB, and CD between the BIPC and the DCE (Figure 5).

Figure 4
BIPC interface connectors and interchange circuits



The BIPC provides the necessary conversions between the different protocols used by the two data ports to control the flow of serial data across the data links. In addition to logic for independent control of the physical links between the BIPC and the two data terminals, the BIPC also provides message handling protocol between the PMS and the BIPC. Because the link from the SDI port does not use message handling protocol as such, the BIPC adds the required protocol characters to messages originating from the Meridian 1, and conversely strips the control protocol from PMS-originated messages before transferring the message body to the Meridian 1.

The BIPC also provides error control functions as part of the message handling. Since the SDI ports do not use parity checks, the BIPC adds parity bits to the serial data sent to the PMS if parity is enabled on the option switch (SW1). It also detects parity bits in the data stream from the PMS, performs Block Character Checks (BCC) for error detection, and then removes the parity bits before sending the message body to the Meridian 1. If errors are detected, the BIPC initiates error recovery procedures.